

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* Jeffrey A. Korn, Peter S. Whitney, and Dale C. Flanders

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Appeal 2007-0078  
Application 09/707,710  
Technology Center 2800

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Decided: April 10, 2007

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Before KENNETH W. HAIRSTON, JOSEPH L. DIXON, and  
HOWARD B. BLANKENSHIP, *Administrative Patent Judges*.  
DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 6-8 and 10-19, which are all the claims in the case. Claims 1-5 and 9 have been canceled.

We REVERSE.

## BACKGROUND

Appellants' invention relates to system and process for post alignment of the optical fiber for polarization extinction ratio (PER) compensation in semiconductor laser system. An understanding of the invention can be derived from a reading of exemplary claim 6, which is reproduced below.

6. A process for manufacturing a semiconductor laser system, the process comprising:

installing a semiconductor chip in a package on a bench;

inserting a polarization-maintaining optical fiber through a fiber feedthrough into the package;

securing an endface of the optical fiber to the bench to receive light generated by the semiconductor chip using a mounting structure;

after the step of securing the endface to the bench, detecting a polarization extinction ratio of light transmitted through the fiber from the semiconductor chip; and

axially rotating the endface of the fiber relative to the bench to improve the polarization extinction ratio by deforming the mounting structure.

## PRIOR ART

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

MILES	US 4,673,244	Jun. 16, 1987
KUHARA	US 6,340,831	Jan. 22, 2002
FLANDERS	US 6,345,059	Feb. 5, 2002

## REJECTION

Claims 6-8 and 10-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Miles in view of Kuhara and further in view of Flanders.

Rather than reiterate the conflicting viewpoints advanced by the Examiner and the Appellants regarding the above-noted rejection, we make reference to the Examiner's Answer (mailed Apr. 7, 2006) for the reasoning in support of the rejections, and to Appellants' Brief (filed Dec. 6, 2006) and Reply Brief (filed Jun. 7, 2006) for the arguments thereagainst.

## OPINION

In reaching our decision in this appeal, we have given careful consideration to Appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by Appellants and the Examiner. As a consequence of our review, we make the determinations that follow.

Appellants argue that:

Moreover, Miles does not suggest the use of any deformable mounting structures. See Answer at page 4, first full paragraph.

Flanders does not teach that the mounting structures can be used for axial alignment.

The arguments of the Answer are premised on the fact that Flanders teaches deforming mounting structures to enhance PER. (Reply Br. 2).

We find the Appellants contentions to be reasonable and persuasive in light of the teachings of Miles, Kuhara, and Flanders.

Appellants argue that Miles teaches axial rotation of the endface before the fiber is set in epoxy (Br. 4-5). We agree with Appellants.

Appellants argue that Flanders teaches alignment, but does not teach or suggest axial rotating the endface of the fiber relative to the bench to improve polarization extinction ratio (PER) (Br. 5).

We agree with Appellants that Miles teaches the attachment of the optical fiber to a ferrule, rotation of the ferrule to improve the PER and then attachment to the bench using an epoxy resin. Therefore, Miles does not teach or fairly suggest the rotation to improve the PER after the optical fiber has been mounted and secured to the bench. While we cannot agree with Appellants that this is a teaching away, we find no suggestion to manipulate the PER after the mounting to the bench with a deformable structure.

Appellants argue that:

The basic approach of alignment after the fiber endface is secured to the bench is taught by the applied Flanders patent, which similarly relies on deformation of mounting structures. In fact, the Flanders patent represents previous work by the instant inventors.

The innovation of the present invention is the recognition that these deformable structures can be also used to axially-align polarization maintaining fiber.

Deformable mounting structure alignment is generally used to avoid problems associated with align-and-bond techniques as disclosed in Miles patent. The basic problem with align-and-bond is identified in

the Miles patent, which problem is that the curing of the epoxy causes alignment shifts. See Miles at col. 5, line 39, *et seq.*.

It is Applicants' position that the present claimed invention would not have been obvious over the applied combination. This conclusion is supported by the fact that neither of the applied reference suggests: 1) axial alignment of the fiber endface after it is secured to the bench; or 2) such axial alignment using mounting structure deformation (Reply Br. 2).

We agree with Appellants that the combined teachings of Miles, Kuhara and Flanders neither teach or fairly suggest the axial alignment of the fiber endface after it is secured to the bench; nor such axial alignment using mounting structure deformation.

The Examiner maintains that Flanders teaches the deformable structure and provides more than sufficient motivation to combine teachings since Flanders teaches active and passive alignment during system manufacture or calibration after an in-service period, relying upon Column 4 of Flanders (Answer 8). We agree with the Examiner that Flanders is quite a good teaching, but we cannot agree that Flanders teaches or suggests use of a deformable structure for improvement of the PER.

While Flanders teaches the use of the deformable structure for calibration after an in-service period, Flanders is silent as to the process or content of the calibration procedure. Since Flanders teaches the use of the deformable structure for alignment purposes, we find it only reasonable to use that deformable structure for calibration of the alignment rather than extending the use of deformable structure for improvement of the PER as is implied in the Examiner's reliance upon Flanders.

Finally, the Examiner relies upon the teachings of Kuhara to teach mounting/installing a semiconductor chip in a package on a bench and securing an endface of the optical fiber to the bench (Answer 9).

Considering the totality of the teachings in the references, we are of the reasoned opinion that the Examiner has pieced together the prior art parts where each part is in a varied process in the semiconductor art. We find that while the parts may be combinable in a strained manner, we cannot agree with the Examiner that it would have been obvious to one skilled in the art at the time of the invention to have arrived at the specific sequence of process steps as specifically recited in independent claim 6. Therefore, we cannot sustain the rejection of independent claim 6 and its dependent claims 7, 8, and 10-19.

#### CONCLUSION

To summarize, we have not sustained the rejection of claims 6-8 and 10-19 under 35 U.S.C. § 103(a).

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REVERSED

ELD

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